ELECTRICAL WORLD

News Issue

OVEMBER 27, 1948

McGRAW-HILL PUBLICATION

mes M. Todd, Consulting Engineer, Who Has Been Elected President of the American Society of Mechanical Engineers

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WE STOPPED THEIR BREATHING TO PROLONG THEIR LIFE!

On large tanks, Nitrile rubber gasket of circular cross-section is compressed as shown. Ring welded to tank keeps gasket in place—prevents too much compression.
On small tanks, Nitrile rubber gasket of square cross-section is compressed between rim of cover and deep-rolled flange on tank. Shown uncompressed.

In G-E Spirakore® transformers, Nitrile rubber gaskets—unharmed by oil, age, or operating temperatures—effectively seal out atmospheric air, moisture, and other contamination—thereby greatly prolonging the life of the insulating oil and consequently the units themselves. By redesigning the tanks, covers, handholes, and gaskets, we've made this sealing possible *and improved accessibility!*

Some years back, we sealed our power transformers completely. Now we've done it with all liquid-immersed, distribution transformers. We've stopped their breathing, too. We've made sealed tank construction available in all General Electric Spirakore transformers—from the smallest to the largest.

Other Improvements

Yet sealed-tank construction is only one of the improvements you get with General Electric distribution transformers. You get Spirakore design—for great savings in size and weight. You get improved impulse strength. You even get a new and better baked synthetic-resin paint, which reduces maintenance costs.

Today—as ten years ago when lighter, smaller Spirakore transformers first made history—Spirakore still leads the field. It's the finest distribution transformer we have ever made, the finest you can buy. Ask for Bulletins GEA-4885 and GEA-4521. *Apparatus Dept., General Electric Company, Schenectady 5, N. Y.*

GE *Spirakore Transformers*

GENERAL ELECTRIC

Vol. 130 No. 22

NEWS OF THE ELECTRICAL WORLD

The Electrical Week

If predictions of the Bureau of Agricultural Economics are correct, businessmen need not fear 1949. They predict that the present high level of business will continue through the first half of 1949, with a slight decline in the second half . . . The Rural Electrification Administration is not going to change its lending policies as the result of the election. However, loans for generating and transmission facilities may take a greater percentage of the total than they have in the past . . . At Chicago, all branches of the industry concerned with farm electrification were represented at the National Farm Electrification Conference, where emphasis was placed on telling the farmer how to use electricity instead of the value of electricity on the farm . . . At Boston the New England Council received a report asserting that the backbone of the area's power supply for many years to come will be thermal and not hydro electric generating plants.

It's probably old stuff to the scientists, but laymen will find an increasing amount of specific new information in releases by the Atomic Energy Commission.

Washing machine sales in September topped 400,000 for the first time. The 433,919 total was almost 9% over the previous record set last March. However, ironer sales for the first nine months this year are about 10% below those for the corresponding period of 1947.

Virginia Electric & Power Co is going the low-price clothing merchants one better. You can buy a suit with one third down and one third more in the first two subsequent months. You can buy VEPCO common stock one third down, one third more three months later, and the final third in another three months.

The Sacramento municipal system has brought back into the limelight a practice engaged in about 15 years ago—issuing federal licenses for nonfederal construction of power plants at federal dams. Back in the mid-'30's, FPC licensed an American Gas & Electric subsidiary to build power plants at three Army dams on the Kanawha River in West Virginia. It also licensed Henry Ford's plant at the Green Island Dam on the Hudson at Waterford, N. Y. Sacramento has asked FPC for a preliminary permit to build the plant at the Army's Folsom Dam on the American River. And the City of Holyoke, Mass., has asked an FPC license to build a 60,000-kw plant at a dam owned by the Holyoke Water Power Co on the Connecticut River.

Atomic Energy Commission Chairman David Lilienthal estimates the cost of a nuclear reactor, from which atomic-electric power might be derived, at "something like 50 million dollars."

The French claim considerable progress in reconstruction and, in part at least, have the figures to prove it. Their kwhr output will reach 30.9 billion next year. In 1938, it was 21 billion. By 1951, France expects to produce 40 billion kwhr, of which 25 billion will be hydraulic.

An end may be in sight to the ageless argument between the high-dam water power developers and those who resent dams as destructive of migratory fish life. The Atomic Energy Commission has found that new spawning grounds for Columbia River salmon can be established successfully by transplanting spawn to suitable pools not previously used. AEC learned this when it studied the effects of using the Columbia as a source of cooling water for the Hanford plutonium piles.

Notes From The News

New Orleans is one area where there will be no power shortage this coming winter. President A. B. Paterson of New Orleans Public Service estimates that winter peak demand will be 185,000 kw while net plant capability will be 257,500 kw . . . The Equitable Building, one of New York City's largest office structures, has closed its 2,750-kw d-c plant and is buying a-c from Consolidated Edison Co . . . South Carolina Power Co is publishing 15 pamphlets on farming with electricity . . . The Hydro-Electric Power Commission has announced that work will begin immediately on its plan to convert its 25-cycle Southern Ontario system to 60 cycles. The cost will be $200,000,000. Completion may take 15 years . . . Dr. Frank D. Fackenthal, former acting president of

ONE-HUNDRED-TEN-year-old Mrs. Derinda Hunt of Scott County, Arkansas, is welcomed as the 200,000th customer of the Arkansas Power & Light Co by Wayland C. Kemp, Danville manager. "Aunt Derinda" has been living in her present home since her marriage at the age of 21. President C. Hamilton Moses of the utility sent the new customer a reading lamp as a present

Columbia University, is to become president of Associated Universities, Inc., which administers Brookhaven National Laboratory, Upton, L. I.

Zinc has jumped 2¢ a pound to 17½¢ East St. Louis. This is the highest price since the 18.26¢ of 1916 . . . Plans for construction on a point overlooking Grand Coulee Dam of a $2,000,000 relief model of Washington State, topped by a 500-ft high aluminum tower, have been proposed by the Columbia Basin Commission of the Washington Department of Conservation and Development.

Conviction of Harold R. Christoffel for lying to the House Labor Committee last March in denying Communist affiliations will be appealed to the Supreme Court . . . The Illinois Commerce Commission has reported that sales of electric energy in September indicated that industry is expanding in the state . . . Denying a request by the Pacific Power & Light Co for a hearing, the Oregon Hydroelectric Commission approved a contract by the North Wasco County PUD for an electric unit . . . Seattle officials have appealed to residents to voluntarily reduce their use of electricity between 4.30 and 6:30 PM daily. Merchants have been asked not to use electrically illuminated signs during the same hours.

Canadian government sources have announced that no federal power controller would be appointed to cope with the power shortage unless the Ontario and Quebec governments requested . . . The Interior Department has disclosed that it will ask Congress to authorize a $20,000,000 Eklutna power project near Anchorage, Alaska . . . Lessees of the Basic Magnesium plant in Clark County, Nev., will get electric energy for 3 mills per kwhr . . . Eta Kappa Nu, honorary electrical engineering fratenity, has recognized the Delta Chapter at Illinois Institute of Technology as the outstanding chapter in the nation.

The Illinois Legislature will be asked to overhaul the present system of state regulation of public utilities. The plan is to abolish the Illinois Commerce Commission and vest its powers in two new bodies, the Department of Public Utilities and a Public Service Commission . . . Retrial of a condemnation action brought by the Stevens County PUD, Colville, Wash., against the Washington Water Power Co has been denied. A jury at the trial set a value of $2,500,000 on the utility's properties, higher than the PUD expected to pay.

CONSTRUCTION:

The gates on Watauga Dam, second largest TVA dam, will be closed Dec 1 to allow the reservoir to fill. The dam is 318 ft high and 900 ft long. The powerhouse will have two 25,000-kw units . . . A recent fire at the Gorge Plant of Ohio Edison Co destroyed $45,000 worth of materials intended for use in expanding the plant . . . Indianapolis Power & Light Co is considering the use of fluorescent street lighting . . . Columbus, Ohio, has announced a $2,000,000, five-year street-lighting program.

A three-year expansion program of the Kansas City, Kan., municipal electric plant at the cost of $5,865,000 has been announced . . . Public Service Co of Indiana has purchased approximately $700,000 worth of General Electric "white way" equipment for street lighting modernization in 240 towns and cities . . . "American Standard Practice for School Lighting" is now available for a small fee from the Illuminating Engineering Society, 51 Madison Ave, New York 10, N. Y. The publication is intended as a guide for all those who have anything to do with lighting of school buildings.

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Estimates and Forecasts of Income, Employment, Production and Prices in the United States

Item	Unit	Calendar Years			Half-Years (annual rates)					
		1935–39	1947	1948	II 1947	I 1948	II 1948	I 1949	II 1949[1]	II 1949[2]
Gross national product	Bil. dol.	84	231.6	251	235.9	246.0	255	255	245	220
Consumer expenditures	" "	63.6	164.8	177	168.4	173.6	180.5	181	174	156
Gross private investment	" "	8.2	30	37.6	30.5	37.9	37	34	30	25.5
Net foreign investment	" "	.4	8.9	3.7	8.3	3.9	3.5	3	2	2.5
Government expenditures for food and services	" "	11.8	28	32	28.7	30.7	34	37	39	36
Disposable income	" "	66.2	173.6	189	178	185.5	193	193	185	168
Labor force	Million	54.3	61.6	62.5	62.3	61.8	63.1	62.6	63.9	63.9
Unemployed	"	9.4	2.1	1.9	1.9	2.2	1.6	1.6	2.4	4.7
Employed	"	44.9	59.5	60.6	60.4	59.6	61.5	61	61.5	59.2
Military	"	.3	1.4	1.4	1.3	1.3	1.4	2	2	2
Civilian	"	44.6	58	59.2	59.1	58.3	60.1	59	59.5	57.2
Nonagricultural	"	34.8	49.8	51.1	50.5	50.8	51.5	51.5	50.8	48.5
Agricultural	"	9.8	8.3	8.1	8.6	7.5	8.6	7.5	8.7	8.7
Industrial production	1935–39=100	100	187	192	187	192	192	192	188	178
Wages and earnings										
Factory hourly earnings	1910–14=100	286	576	621	592	612	630	640	630	620
Factory payrolls per worker	"	129	440	477	451	464	490	500	475	460
Consumers' price (urban)	1935–39=100									
Total	"	100	159	172	163	169	174	172	171	162
Food	"	100	194	210	201	208	214	210	200	185
Other than food	"	100	140	149	142	147	150	152	152	147
Wholesale prices										
All commodities	1926=100	81	152	167	157	163	168	165	158	147
Farm products	"	76	181	190	187	190	190	188	180	155
Food products	"	79	169	178	175	177	182	175	165	155
All excluding farm and food	"	81	134	150	139	148	152	151	147	142
Cash receipts from farming	Bil. dol.	8.5	30.2	29.9	.....	.....	.....	.....	29[3]	27[4]
Realized net income of farm operators (excluding Government payments)	" "	4.8	17.6	16.3	.....	.....	.....	.....	15[3]	13.8[4]
Volume of farm marketings	1935–39=100	100	143	140	.....	140	.....	140	.....	.....
Prices received by farmers	1910–14=100	107	276	291	286	291	291	285	275	230
Prices paid, interest and taxes	"	128	231	250	236	249	250	250	247	230
Parity price ratio	"	84	120	116	120	117	116	115	111	100

[1] High level assumption. [2] Low level assumption. [3] Estimated for whole of 1949 under high level assumption. [4] Estimated for whole of 1949 under low level assumption.

Business to Continue at 1948 Level

Bureau of Agricultural Economics Statisticians Take Optimistic View of 1949 Business Conditions — Predictions Include Employment, Production, and Prices

WHAT WILL BUSINESS be like in 1949? Will there be a depression? Will prices go up or down? Answers to these questions are important to all industry executives, including those in the electric utility industry. The statisticians and economists who make the Bureau of Agricultural Economics one of the top economic forecasting teams of the country, in or out of government, have attempted to supply the answers.

Their guess is that during the first half of 1949 business activity will roll along at about its present level. About the second half they were not so optimistic. In most classifications of business activity they look for a drop, though in most cases the drop is expected to be small. However, the BAE forecasters played safe in their predictions for the second half of 1949, now over seven months away. Two estimates were made, one based on a high, the other on a low level assumption.

Under the high level assumption gross national product in 1949 will be practically identical to the $501 billion estimated for this year. The low level assumption reduces this total by $25 billion. If this prediction is true, no one need fear the coming year. There will be employment for everyone and enough income to keep business at its present high peak.

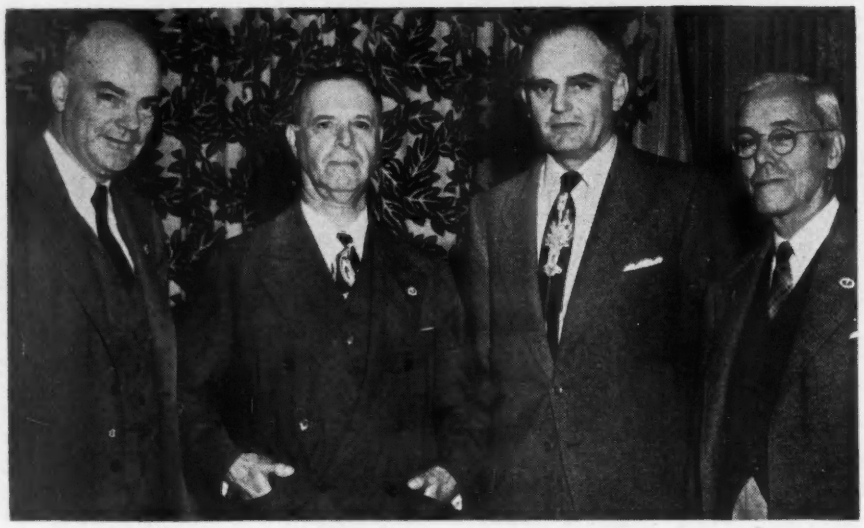
But BAE economists go further in their predictions—make estimations on employment production, and prices.

They look forward to an increase in the labor force of the country, though they do not explain the source of these additions. Three sources are possible: 1. An increase in the number of children reaching working age over the number of workers dying or retiring from industry. 2. Immigration, which is likely to increase because of the law permitting or encouraging displaced persons to emigrate to the United States. 3. Increased employment of women not now included in the labor force.

This increase in labor force will mean more persons unemployed. At no time in 1949 is the number of employed expected to exceed the 61.5 million now at work. A slight increase of 600,000 men in the military is expected to balance a decline in the number of civilian workers.

Contrary to most predictions now being made by employers, the BAE group expects factory hourly earnings to rise in the first half of 1949 but to fall in the second half.

The cost of food to urban consumers is expected to decline rather sharply, significant since the estimates were made by employees of the Department of Agriculture. However, a slight increase in other items would leave the urban consumer paying an average price just a bit lower than at present. But wholesale prices of all commodities are expected to break more sharply. The effects of this would not be felt in entirety until 1950.



AEIC OFFICERS are, left to right, J. W. Parker, retiring president; William Schmidt, Jr., vice-president; J. W. McAfee, president; and F. V. Magalhaes, secretary and treasurer

AEIC Annual Meeting Marks 64th Anniversary

Celebrating its sixty-fourth year as an outstanding industry organization, the Association of Edison Illuminating Companies held its annual meeting at White Sulphur Springs, W. Va., Nov 17-19.

Two hundred and fifty executives and guests of the 51 active member companies held five meetings, at which major problems of the industry were discussed openly and frankly.

Optimism concerning the ability of the electric industry to complete its expansion program successfully and continue to provide improved service to its customers was the keynote of the meeting.

Spokesmen appearing on the program included J. W. Parker, Constantine Bary, A. D. Bailey, G. M. Armbrust, A. L. Penniman, Jr., G. B. M. Robertson, H. K. Sels, P. W. Thompson, Charles E. Michel, Philip H. Powers, Edwin Vennard, George E. Whitwell, George H. Love, Curtis E. Calder, Walker L. Cisler, C. W. Mayott, Albert H. Gordon, and others.

At the conclusion of the session the following officers were elected: President, J. W. McAfee, president of Union Electric Co of Missouri, to succeed J. W. Parker, president of Detroit Edison Co.; vice-president, William Schmidt, Jr, president of Consolidated Gas, Electric Light & Power Co of Baltimore; and secretary and treasurer, F. V. Magalhaes, Consolidated Edison Co of New York.

Directors elected were J. W. McAfee, Walter C. Beckjord, George H. Blake, Prentiss M. Brown, A. M. Beebee, Ralph D. Cutler, E. J. Doyle, S. Ferguson, E. L. Lindseth, H. P. Liversidge, J. W. Parker, John C. Parker, H. M. Sawyer, William Schmidt Jr., R. H. Tapscott, G. W. Van Derzee, Justin R. Whiting and F. V. Magalhaes.

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Indiana Utility Leases Facilities at Powder Plant

Public Service Co of Indiana is undertaking a lease operation of the generating facilities at the Army Ordnance Department's Charlestown powder plant.

The 47,000 kw of new capacity to be thus added, together with 45,000 kw expected to be made available by late December from a unit at the company's Edwardsport plant, will enable Public Service to meet the usual winter increase in demand, company officials said.

The Charlestown station will be operated on a five-year lease, subject to interruption at the Ordnance Department's option. Eight thosuand of its 55,000 kw capacity will be reserved for the Department. Power from the plant, which is expected to be available this month, will be fed into the Louisville-Cincinnati 132-kv line and the Louisville-Scottsburg-Seymour 66-kv line.

Giant Water Heater

A storage electric water heater believed to be the largest individual heater in the Southern Hemisphere has been installed in a Sydney, Australia, tannery. It is 12½ ft high, 9½ ft in diameter, and has a capacity of 2,700 Imperial (3,375 American) gallons. Heating units total 120 kw in 3 groups of ten 4-kw elements.

FPC to Settle Rivalry for Connecticut River Site

Federal Power Commission will resolve the rival bids of a municipal electric system and a private company to develop a hydroelectric site on the Connecticut River.

Holyoke Water Power Co already has a 2,100-kw plant on the stream near Holyoke, Mass. Both the company and Holyoke's municipal Gas & Electric Department have asked FPC to license new plants at the same site.

The company's present Holyoke hydro plant was built without a federal license, though the utility has an application for a permit before FPC at this time. The city system proposes to acquire the existing plant.

Its new development plans call for installation of two 15,000-kw generating units, with provision for ultimate installation of two more. The company also proposes a 60,000-kw installation. It would install the first 15,000-kw unit immediately and the others when economically justified.

Under Section 7(a) of the Federal Power Act, a state or municipality is entitled to preferential consideration by FPC if its hydro project plans are equivalent in terms of development, utilization, and conservation to those of a rival private company.

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Georgia Power to Double Capacity of Yates Plant

Georgia Power Co has completed plans to double the initial capacity of its new Yates steam plant on the Chattahoochee River near Whitesburg. Two 100,000-kw units will be installed to be in operation early in 1950.

The first two of the four-unit plant will produce twice as much power as the Clark Hill hydroelectric development, now under construction near Augusta, is expected to provide. Cost of the two units, including transmission lines, will be approximately $21,000,000. The 400,000-kw ultimate capacity of the plant will be 66% greater than any steam-electric plant now existing in the South.

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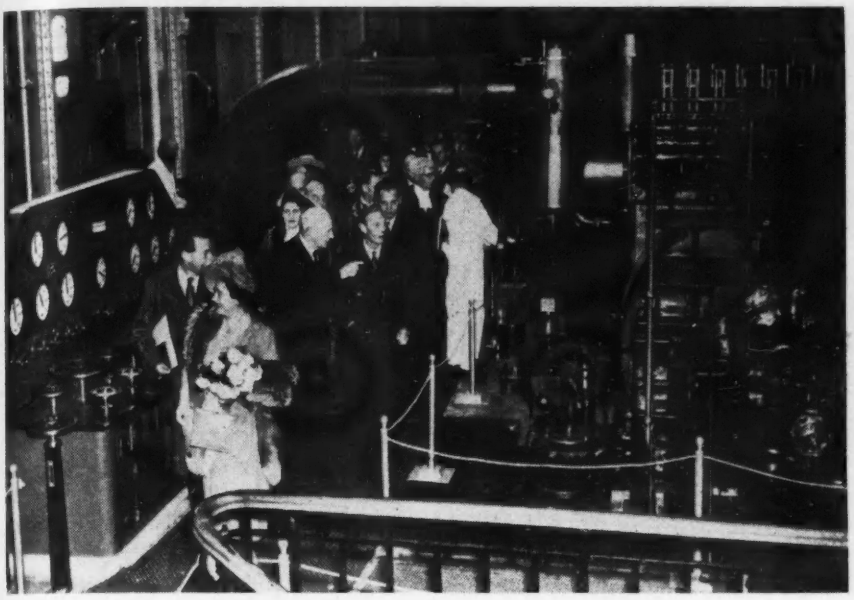
Ohio Contracts Signed

Two Ohio cities, Port Clinton and Oak Harbor, have signed power contracts with the Ohio Public Service Co. Port Clinton's five-year agreement provides a domestic and commercial rate increase of 9%. The new 15-year contract signed in Oak Harbor includes a fuel clause.



ENGLAND'S KING AND QUEEN tour the new power house at Kingston-on-Thames after its formal opening by the King. The 120,000-kw plant, in four 30,000-kw units, cost £6,000,000 and is the first of a number to be built by the British Electricity Authority

More REA Loans for Generation, Transmission Indicated by Wickard

RURAL ELECTRIFICATION Administration will not change its lending policies as a result of the recent election. At least, that's what top officials of the agency are saying.

This doesn't mean that REA will continue to make loans for generating and transmission facilities at its present rate —a little over 11% of loan funds approved to date were for that purpose. It may make such loans in increasing numbers in the future.

REA Administrator Claude Wickard suggested as much in a speech, Nov 17, at Fargo, N. D. REA-financed cooperatives are having increasing difficulties in obtaining "reliable wholesale power at the lowest possible cost," Wickard told a farm organization audience.

One solution to this problem, he pointed out, was the construction of generating plants by the co-ops. But REA will provide funds for such plants, he said, "only when they are necessary to provide plenty of power or to effect a saving. We do not make such loans if the commercial power companies give assurance of providing adequate power (to the co-ops) at a cost as low as, or lower than, the cost at which cooperatives can generate and transmit it themselves."

Wickard also commented on the $6,197,000 loan granted recently by REA to the Minnkota Power Cooperative, Grand Forks, N. D. Minnkota will use $1,930,000 for a new 11,500-kw steam generating unit at its Grand Forks plant. It will spend another $865,000 for completion of two 5,000-kw steam units and for other facilities at the same plant.

The loan also provides $2,382,000 for transmission lines, including 452 miles of new lines and conversion of an existing line from 34.5 kv to 69 kv. Another $580,000 will go into construction of 13 new substations and four new switching stations in Minnesota and North Dakota.

The generating co-op is composed of six power distribution cooperatives in Minnesota and four in North Dakota. The member co-ops now are serving 15,124 consumers connected to their distribution lines. They estimate they will have 40,400 consumers by 1960. Minnkota's present generating facilities consist of diesel plants at Grand Forks (5,160 kw) and Harwood, N. D. (4,800 kw).

Wickard also revealed that REA is considering a new loan to the Montana-Dakota Utilities Co. The contemplated loan would finance construction by the company of a steam generating plant at Beulah, N. D. Montana-Dakota previously borrowed REA funds to build transmission facilities.

Another recent (Nov 17) generation and transmission loan was approved by REA for the Corn Belt Power Cooperative, Humboldt, Iowa. Major expenditures from the $5,994,000 loan will include the following:

$2,250,000 for addition of an 11,500-kw steam generating unit at the co-op's Humboldt Plant; $2,552,500 for 307 miles of 69-kv transmission line and 16 substations; $794,000 for completion of two 7,500-kw steam units at Humboldt; $125,000 for rehabilitation of the diesel plant at Pocahontas, Iowa.

The Corn Belt co-op now operates diesel generating plants with a total capacity of 25,255-kw. It supplies energy at wholesale to 11 REA-financed distribution cooperatives in northern and central Iowa. REA previously had authorized loans totaling $9,562,868 to Corn Belt.

Only 123 More!

Less than 1% of the 14,168 farms in the area served by Connecticut Light & Power Co have no electric service available. Only 123 farms require line extensions to obtain service, and next year 74 of these will be reached through extension of 82 miles of lines. Thirty-six have declined service, and construction of lines to the remaining 13 has been found impractical.

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Paducah's Right to Buy Utility Upheld by Court

Paducah, Ky., has obtained final approval from the Court of Appeals on its plan to buy the Kentucky Utilities Co plant in Paducah.

The court refused to reconsider its June 15 decision upholding the city's right to buy the plant and operate a municipal system with TVA power. It also affirmed a circuit court ruling requiring the company to appoint its representative to a three-man appraisal board. In granting a franchise to the company in 1940, the city reserved the right to buy the plant later.

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To Build $15,000,000 Plant

Duke Power Co, Charlotte, N. C., has purchased 400 acres of land in Anderson County, S. C., for erection of a $15,000,000 power plant on the Saluda River between Williamston and Belton, S. C. Work is scheduled to begin in January, on completion of a similar plant in North Carolina. Duke paid $16,000 for the land.

FARM ELECTRIFICATION is important to all phases of the industry, judging by the varied interests represented by these men at the National Farm Electrification Conference. Left to right, top panel: A. W. Turner, U. S. Department of Agriculture; F. H. Lacy, Monongahela Power Co; R. H. Gist, University of West Virginia; G. A. Rietz, General Electric Co; W. J. Rideout, Edison Electric Institute. Botton panel: E. H. Wright, South West Tennessee Electric Membership Cooperative; Fred E. Darr, Menard Electric Cooperative; C. R. Breckenridge, South Central Rural Cooperative; A. E. Becker, Menard Electric Co-op; W. H. McInnis, Ebasco Services, Inc; Dawson Womeldorff, Public Service Co of Northern Illinois; Fred Shaw, Texas Power & Light Co; J. L. Burgan, N. Y. State Electric & Gas Corp

Meeting Family Needs Discussed at Farm Electrification Conference

MEETING THE FARM family's needs electrically was the main subject discussed at the third National Farm Electrification Conference last week at Chicago. The 300 registrants included educators, publishers, home economists, power suppliers, agricultural engineers, farmers, and farm wives representing the 23 participating organizations.

In opening the conference, Chairman Frank E. Watts stated "The substitution of electric power for muscle power will be one of the vital factors in future agricultural progress. This is so because few economies in labor savings and productive efficiency can be effected so quickly and at so low a cost . . . Aside from the productive uses, electric power also is a potent force in bringing sociological changes in farm living. Its use opens to farmers a new world which offers surcease from many laborious tasks."

The necessity for providing farmers with the necessary information to choose and utilize the proper apparatus for doing their daily chores was emphasized by H. O. Rusk, dean, College of Agriculture, University of Illinois.

A panel discussion on "What Power Suppliers Are Doing to Help and Inform Farm Families Electrically" brought varied comments. Frank Warner, Huntington (Ind.) County Rural Membership Electric Cooperative, stated that a close check is kept on customer bills. Any sudden increase or decrease is investigated. This is often an opportune time to discuss adequate wiring as well as new power uses.

P. E. Brookover, Public Service Co of Colorado, reported that his company keeps a staff of farm service advisors in the field regularly contacting farmers and offering guidance on wiring and how to buy and use equipment.

Clarence Reed, Oklahoma Statewide Electric Cooperative, said demonstration work shops are being developed to teach farmers use of motors and tools.

Home economists on the program stressed the need for utilizing every known technique in bringing application information to the farm wife. They emphasized that the utmost in cooperation was necessary with participation by manufacturer, dealer, power supplier, and extension service.

L. M. Knox, a farmer from Morrison, Ill., discussing the importance of power to the operation of a 200-acre farm, stated, "The farmer is now vitally interested in whether or not John L Lewis' coal miners go out on strike because less and higher-priced coal means less and higher-priced electricity."

Dean Rusk was elected chairman of the 1949 conference. Titus B. Schmid, president, Crescent Supply Co, Dubuque, Iowa, was elected vice-chairman, and Karl Gorham, business manager, *Electricity on the Farm*, New York, was elected secretary-treasurer.

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New Radio Relay System Speeds WU Telegrams

Microwave radio relay systems of such nature have been established by Western Union as to permit sending more than 2,000 telegrams a minute in both directions. Demonstration of the high quality FM broadcast program transmitted to Philadelphia via two relay towers and back via three others by means of the same beam radio was given at a recent meeting of the New York Electrical Society by Col. Julian Z. Millar, radio research engineer for Western Union.

There are similar relays in operation between New York, Pittsburgh, and Washington. No wire circuits are involved since the beams terminate directly at principal buildings in the cities. It is planned to extend the service, including telegraph messages, broadcast programs, television, and facsimile to Minneapolis, Kansas City, and Atlanta by towers 30 to 35 miles apart.

The transmitters involve only 100-milliwatt output because of the high antenna gain attained by beam operations equivalent to 1,000 kw with normal dispersion of the signal. Colonel Millar said that during last winter's ice storm, when extensive damage was done to wire systems, the entire telegraph traffic was handled over the radio beams. One station had to rely on its emergency power installation for 10 days. The success of the radio system has already supplanted some 2,900 miles of wire line.

Colonel Millar explained that the large number of simultaneous messages is possible through use of pulse amplitude modulation relying upon 8,000 sweeps per second across a battery of 32 gate valves with equivalent discrimination at the receiving end.

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Forms Housing Subsidiary

Virginia Electric & Power Co's arrangement to provide housing for employees of its new Possum Point plant near Dumfries has been approved by the State Corporation Commission. The company has incorporated a subsidiary corporation to which 151.6 acres of land near the station will be deeded. VEPCO will advance construction funds.

POWER SURVEY OF NEW ENGLAND is presented to Richard L. Bowditch, center, president of the New England Council, by Edgar H. Hunter, right, chairman of the New Hampshire Public Service Commission and of the survey committee. At left is W. F. Uhl, president, Charles T. Main, Inc, Boston engineering firm, who was engineering director of the survey

New England Must Rely on Fuel, Not Hydro Power

Fuel-generated electricity must be the backbone of New England's power supply for many years to come. Valuable as economically warranted hydro may be, there simply is not enough of it undeveloped and practicable in the Northeast to meet New England's needed 1,100,000-kw generating-plant expansion in the next decade.

This is the summation of an 84-page engineering report delivered to the New England Council Nov 18 at Boston before more than 1,000 business and industrial leaders attending the Council's annual conference.

The report, an answer to recent agitation for more hydro development, placed potential capacity of undeveloped hydro in New England which can be developed under suitable load conditions at 420,000 kw. Of this amount, Maine's potential is 263,000 kw, and under a state law output from this capacity could not be exported. Even if all potential sources of hydro were developed, they would supply only one-third of the anticipated demand over the next decade.

Estimated peak load in 1957 will be 4,000,000 kw. Since V-J Day 1,440,000 kw has been ordered. All will be installed by 1951. By 1957 it is estimated that total installed capacity, including secondary hydro and reserves, will have reached 4,994,000 kw. About 73% of New England's economically feasible hydro has now been developed. In Maine this proportion is 65%; in Massachusetts, Connecticut, and Rhode Island, 82%. The principal sites in Maine are 250 miles from the Boston market.

The report points out that the importance of the cost of power in manufacturing has been greatly overemphasized. In textiles, power is but 2.3% of the total cost. For industry as a whole in the area, it is but 1.4%.

•

Lumber Mill to Provide Power for Nearby Area

A project to provide electric power for a large area of northeastern Arizona and a portion of New Mexico is progressing rapidly through teamwork of the Rural Electrification Administration and Southwestern Lumber Mills, Inc, at McNary, Ariz.

Patterned after a similar setup at the company's mill at Flagstaff, the McNary unit is a modern steam-turbine plant utilizing waste products from the mill. Adapted for diesel use also, the plant will allow the lumber mill to produce 10,000,000 kwhr annually above its own requirements.

The company has a contract with the Novapache Co-op to distribute the power. Already 154 mi of power line has been constructed and more than 1,223 customers supplied with power. Another 128 mi of power line now is under construction.

•

Calgary Plans Expansion

Calgary Power Co Calgary, Alberta, has announced it will proceed with an expansion program slated to cost some $18,000,000. When completed in about five years, the expansion will more than double the 107,550-hp capacity of the five plants now operating. Three units will be installed in the Spray Lake project, the first scheduled for operation in 1950. Others will be constructed at Canmore and Bearspaw, just west of Calgary on the Bow River.

Myers Didn't Tell Us— Robinson, McLaughlin

Presidents of Puget Sound Power & Light Co, Seattle, and Washington Water Power Co, Spokane, have denied knowledge of a $200,000,000 "package price" plan for the sale of their systems, as well as the Pacific Power & Light Co system in the state, to a group of PUD's. The *New York Times* reported that such a plan has been completed and is "very probable of consumation," with the Puget Sound part of the deal nearer a climax.

Frank McLaughlin, Puget Sound president, said his company has received no purchase proposal but "will give earnest consideration to and submit to stockholders any fair and valid over-all purchase proposal, backed up with evidence of financial ability to perform." He added, however, that he could "not see how an over-all purchase proposal can be made while the Snohomish PUD is in the process of condemning the company's property in that county."

Kinsey M. Robinson, Washington Water Power president, said he knew nothing about the proposal but that he probably wouldn't, because all of the company's common stock is owned by the American Power & Light Co. He contended the reported price of $80,000,000 for Washington Water Power and Pacific Power & Light was too low.

Guy C. Myers, fiscal agent for the PUD's, has been working on plans for an over-all acquisition which would be legal under existing law ever since an earlier plan for the Skagit PUD to buy the Puget Sound Power & Light Co was declared illegal by the Washington State Supreme Court last year. The new plan, largest of its kind in the history of the electric industry, calls for sale of PUD bonds to institutions, with funds derived therefrom to be turned over to a non-profit corporation owned by the PUD's.

•

2 Brazos Groups Agree on 5-Year Power Pact

A bitter fight ended recently when the Brazos River Conservation and Reclamation District and Brazos River Transmission Electric Cooperative, Inc, Waco, Tex., signed a five-year agreement for sale of power from the District's Morris Sheppard Dam to the co-op.

The co-op will pay $257,500 a year and make up any operating deficits under terms of the contract, which is subject to approval by the Rural Electrification Administration and Federal Power Commission.

PHILIP D. REED, left, chairman of the board of General Electric Co; Harvey Brown, president, International Association of Machinists, AFL; and H. Leeson, director of British Electrical and Allied Manufacturers Association, stroll in London, where they are serving as members of the Anglo-American Productivity Committee to improve British industry

Nuclear Electric Energy Expected in 8-10 Years

Electric energy may be produced from nuclear reactors in "eight to ten years." But there still is no prospect for private industry to get into atomic power production on a proprietary basis.

Atomic Energy Commissioner Robert F. Bacher told the Washington, D. C., Academy of Science last week (Nov 18) that technical development of energy-producing reactors is "promising." Addressing the New England Council at Boston the next day, AEC Chairman David Lilienthal predicted increased latitude for industry participation in atomic programs. But this won't be possible in development of nuclear power, he added.

Bacher refused to speculate on the economics of energy produced from nuclear plants. He predicted energy production "on a demonstration basis" probably within "the next two years." This was a reference to the air-cooled research reactor being completed at AEC's Brookhaven Laboratory on Long Island. A small turbine will be operated in connection with this pile.

Pilot power plants at the Argonne and the Knolls Laboratories probably will be producing energy in eight to ten years, Bacher said. First use of a mobile nuclear reactor probably will be for ship or submarine propulsion. He discounted reports of early application of atomic power in aircraft. Scientific as well as technical and engineering problems are yet to be solved in this field, he asserted.

Chairman Lilienthal pointed out that an atomic power plant would be "virtually an atomic bomb arsenal," since it would produce fissionable materials as well as electric energy. The industrial know-how required to build and operate such a plant is "the very sort of knowledge that must be held secret as long as possible."

Lilienthal and Bacher also called attention for the first time to a new AEC project. This is construction at an unrevealed location of a research pile for the study of reactors themselves.

•

Lake Union Unit Doubles Last Year's Production

The Lake Union steam plant of the Seattle City Light began operations two weeks earlier this year than last and is producing more than twice as much power as it did at the same time a year ago..

The plant started operations last year on Nov 4, with a 12,000-kw peak and 40,000 kwhr of daily production. This year it began operating Oct 19, with a 26,000-kw peak and a daily production of 85,000 kwhr. The power is bought by the Washington Water Power Co, Spokane, under the Northwest Power pool arrangement.

SEC RULINGS

CENTRAL & SOUTH WEST CORP and its subsidiary, Public Service Co of Oklahoma, have received commission approval of their application-declaration as amended. Under the plan filed, Public Service has amended its articles of incorporation under which it proposes to (1) change and increase its total authorized number of shares of common stock to 2,000,000 shares of $10 par value; (2) issue shares of the new $10 par value common stock to Central, the holder of its 111,167 shares of outstanding $100 par value common stock, on the basis of 10 shares of new common stock for each share of $100 par value common stock held (3) issue as a common stock dividend to Central 688,330 additional shares of the new $10 par value common stock, in connection with which Public Service will transfer $6,883,300 from its earned surplus account to its common stock capital account, and (4) increase the voting rights of the preferred stock of Public Service from one vote to ten votes per share. Also approved was the proposed acquisition by Central of 1,111,670 shares of the new $10 par value common stock of Public Service in exchange for the surrender and cancellation by Central of its holdings of the outstanding 111,167 shares of $100 par value common stock of Public Service and the proposed acquisition of 688,330 additional shares of $10 par value common stock of Public Service. (Release No. 8619).

NORTH AMERICAN CO and its subsidiary, Union Electric Co of Missouri, did not get commission approval of their application proposing the transfer by the parent to the subsidiary of all of the outstanding stock of the West Kentucky Coal Co, another subsidiary of North American. The commission said that the request to transfer the securities was treated as an appeal for modification of a 1942 order of the commission in which North American was directed to "sever its relationship" with West Kentucky. In that decision SEC found the West Kentucky properties not to be retainable with Union Electric Co. (Release No. 8626).

CENTRAL NEW YORK POWER CORP has obtained permission to increase its bank borrowings from $10,000,000 to $15,000,000. The additional borrowing, to be made on 2½% promissory notes due Dec 31, 1950, will be applied to construction costs. (Release No. 8628).

MEETINGS

PREVIOUSLY LISTED

American Society of Mechanical Engineers—Annual Meeting, Hotels Pennsylvania and New Yorker, New York, November 28-December 3.

National Exposition of Power and Mechanical Engineering—Grand Central Palace, New York, November 29-December 4.

National Electrical Contractors Association—Annual Meeting, Roney Plaza Hotel, Miami, Fla., November 30-December 3.

Utility Operating Revenues Rise 12.7% in September

Electric operating revenues of the larger privately-owned electric utilities in the United States in September, 1948, were $354,256,000 as compared to $314,228,000 in September, 1947, an increase of 12.7%, the Federal Power Commission reports.

Revenue deductions (including operating expenses, depreciation, and taxes) were $288,158,000, or 14.0% over those of September, 1947.

Gross income, including other utility operating income, amounted to $74,083,000, an increase of 6.2% for the month. Net income was up 9.2% to $54,065,000 from the $49,515,000 reported in 1947.

•

Utility Peak Loads Set New High in September

The aggregate of major electric utility system peak loads for September, 1948, was 47,960,000 kw, FPC reports. This peak load total, which set a new maximum, was higher by 0.9% than the previous record of 47,554,537 kw reached in December, 1947. September peak loads were about 4,188,000 kw or 9.6% higher than September of last year and 476,000 kw above the August 1948, total.

Corresponding September energy requirements of 23,184,000,000 kwhr were 2.7% below the preceding month but 10% greater than September 1947.

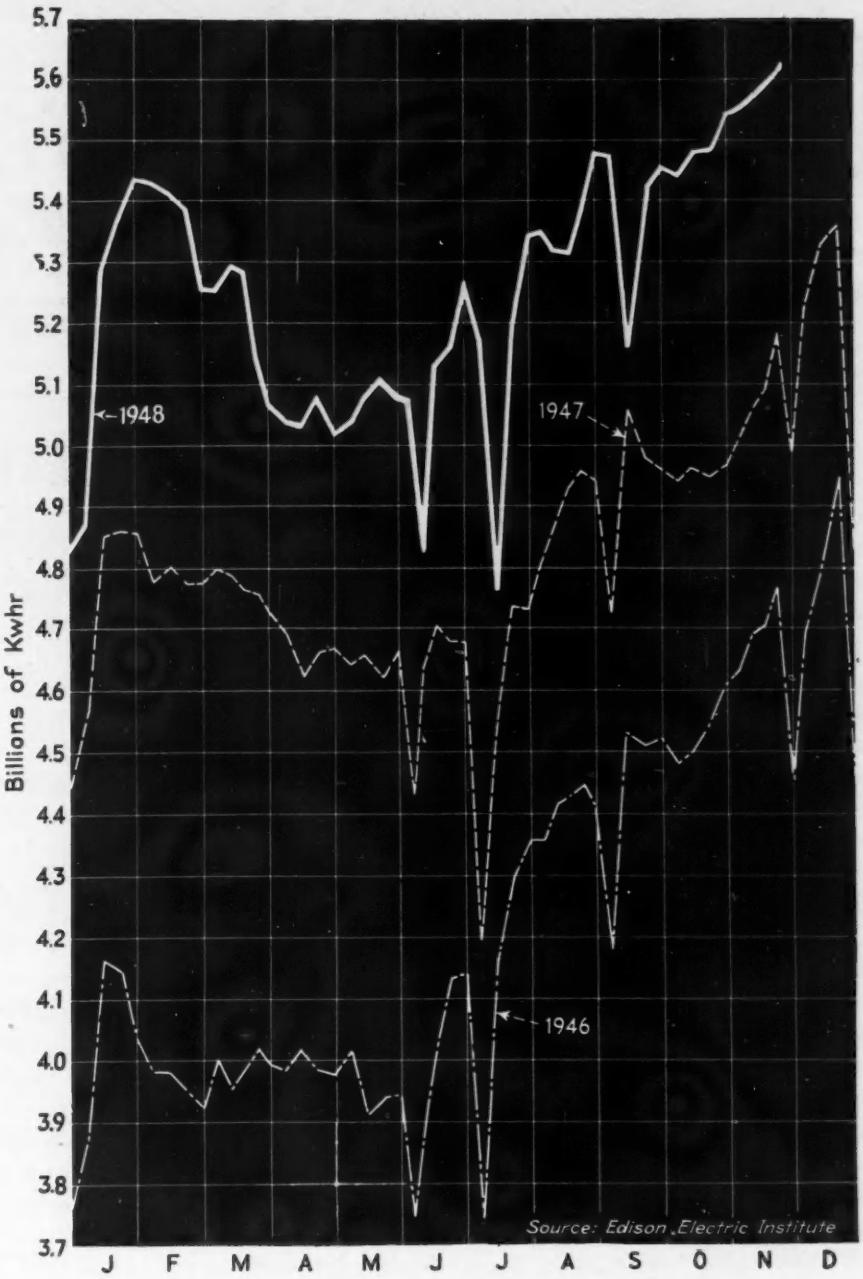
•

Connecticut L&P Plans $50,000,000 Expenditure

Nearly $50,000,000 will be added to the improvement and construction program under which Connecticut Light & Power Co has spent $27,000,000 in the past three years. About $15,600,000 will be expended this year.

The bulk of this $50,000,000 will be devoted to electrical developments, although some gas plant additions will be made. Expenditures planned include about $25,000,000 for additions and improvements to generating facilities, including projects under way, and about $20,000,000 for transmission and distribution facilities.

By 1951 the installation of three new generators will increase capacity by 133,880 kw. Connecticut L&P will add about 240 mi of new high-voltage lines, 500 mi of distribution lines, and 30 substations. Postwar increases in consumption have largely offset the program launched in 1945 to make up for wartime shortages and restrictions.



Output and Capacity Race a Close One

The race between output and capacity is getting closer and closer with the finish line—the December peak period—only four weeks away. From the Federal Power Commission this week came an announcement that as of Nov 1, installed capacity was 54,968,075 kw. This was an increase of approximately 5.3% over the 52,211,488 kw of Dec 31, 1947.

Output for the week ended Nov 20 was only 8.6% above that for the corresponding week a year ago. This was the fifth successive week of percentage decrease from last year. Naturally the aim of all producers is to increase capacity to a figure equal to that of the output increase. And they will be glad to settle for a tie race.

Output for the week ended Nov 20 was 5,626,900,000 kwhr. This was the seventh successive weekly record.

Weekly Output, Millions Kwhr

1948		1947		1946	
Nov 20	5,627	Nov 22	5,180	Nov 23	4,765
Nov 13	5,571	Nov 15	5,084	Nov 16	4,700
Nov 6	5,564	Nov 8	5,057	Nov 9	4,682
Oct 30	5,555	Nov 1	5,009	Nov 2	4,628
Oct 23	5,539	Oct 25	4,964	Oct 26	4,602
Oct 16	5,482	Oct 18	4,946	Oct 19	4,540
Oct 9	5,482	Oct 11	4,958	Oct 12	4,495
Oct 2	5,449	Oct 4	4,935	Oct 5	4,478
Sept 25	5,461	Sept 27	4,956	Sept 28	4,518

Percent Change from Previous Year

	Nov 20	Nov 13	Nov 6
New England	+ 3.8	+ 3.8	+ 3.4
Mid-Atlantic	+ 4.1	+ 5.0	+ 3.4
Central Industrial	+ 8.2	+ 8.3	+ 8.9
West Central	+ 8.0	+11.7	+10.1
Southern States	+10.7	+11.1	+13.3
Rocky Mountain	+21.1	+20.9	+21.2
Pacific Coast	+10.1	+13.6	+15.0
Total United States	+ 8.6	+ 9.6	+10.0

IN THE INDUSTRY

RICHARD N. LARKIN

"PUBLIC POWER PAYS," according to General Manager Carlton L. Nau of the American Public Power Association. That's the title of a study completed recently by Nau. It's one that probably will command wide scrutiny throughout the power business, however owned.

Perhaps most striking of the survey's findings is that which declares that non-federal, publicly-owned systems contribute more heavily to the support of government than do privately-owned power systems. Just about as striking, though, is another finding which insists that private systems could save up to $90,000,000 yearly if they were operated as efficiently as non-federal publicly-owned systems.

In examining the data to determine whether public or private power contributes more to the support of government, Nau has classed as "taxes" all contributions to the support of government. This might easily evoke some pretty broad criticism of the study. Whether such criticism would be entirely justified is a question that probably would only be argued endlessly—and either on passionate or dispassionate grounds.

"One begins to wonder about the efficiency of the business management of the business-managed utilities compared to the service utilities," Nau wrote. "By comparison, the business-managed utilities appear to spend $30,000,000 a year too much on the accounting and collecting expenses; advertising and sales promotion costs are excessive in the amount of $20,000,000; and administrative costs are too high by $40,000,000. In total, their business expenditures are excessive in the amount of about $90,000,000 annually.

"The private companies are bigger than municipal systems and bigness is supposed to promote efficiency. Their executives are more highly paid and high pay is supposed to command unusual ability. Above all, they are 'business-managed' and business management is certainly supposed to result in economy. That the opposite appears to be the fact will require some high-level explanation—possibly the design of a new slogan."

At this point—anticipating a chance to study the Nau survey more closely when the $1 order which has been sent to APPA at 1757 K St NW, Washington, 6, D. C., has been filled—one particular thought occurs.

If Nau's conclusions be correct, the reddest faces won't all be found in utility offices. Imagine the feelings of the utility commissions, whose job it is, among other things, to insure efficient management of operating electric companies. That $90,000,000, for instance, which Nau finds to have been spent inefficiently, is about the total of the rate cuts imposed under regulation during 1946. With more and more electric companies seeking rate boosts, such a windfall—if it exists—can hardly be overlooked by the regulators. Nau's findings tend to put them on the spot, for public power people have been arguing for years that regulation has failed and that public ownership is the only answer. Of course, it's to be doubted that the Nau survey will panic the regulators into a hasty revision of everything that's been developed in the art since Smyth vs Ames. But it is certainly apparent that if Nau is right, the regulators—and a few thousand industry executives—are wrong.

TECHNICAL NOTES

ARCHER E. KNOWLTON

Fan life is 2 to 6 times longer if the fan is placed after the dust collector.

Aerial cable is appealing to industrial plants as an alternative to conventional overhead runs from building to building. One installation contemplates stainless steel messenger.

Load swings can generally be taken better by the newer units. It may be advantageous to leave a bit of margin above base loading of the newer unit rather than throw all swings onto the older units.

Turbogenerator vibration can come from an out-of-level condition of the shaft or coupling—it doesn't take more than a couple of hundredths of an inch.

Graphite development is strikingly resisted when a small concentration of chromium is added to an aluminum-bearing molybdenum steel for high temperature piping.

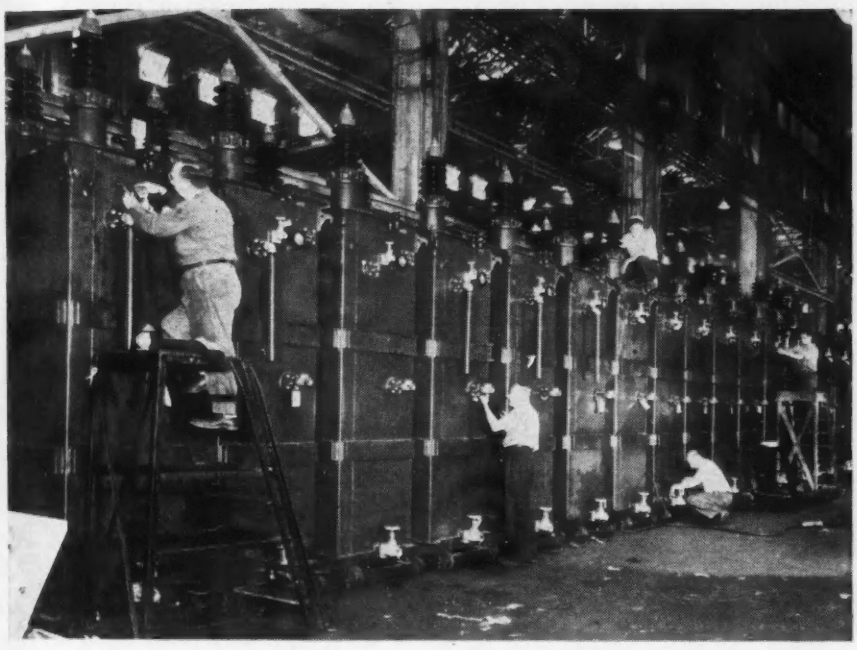
Forced circulation boilers of the Lamont and monotubular Sulzer types are going into Belgian power plants and others elsewhere around Europe. Attitude here lacks corresponding enthusiasm.

Saturable reactors with cores of magnetic alloys having rectangular hysteresis characteristics can serve as magnetic amplifiers offering voltage gains of one million or more.

Frequency-sag relays could conceivably trip off dispensable loads automatically during periods of excess system loading. At least the scheme is being contemplated abroad.

Cable patrol by airplane? A Bell System company is doing it semi-weekly to catch excavations, irrigation extensions, terracing, road construction, etc, which might interrupt transcontinental service over buried cable.

MANUFACTURERS and MARKETS



SIXTEEN IDENTICAL water-cooled power transformers being assembled at the Pittsfield, Mass., plant of General Electric Co will be installed in the main substation of Cia Docas Santos in Sao Paulo, Brazil. The transformers are rated single-phase 1250 kva, 60 cycles, 44,000 to 2,300 v. Each will be installed in a separate cell

Stainless Steel Tested for Cable and U-bolt Use

Stainless steel cables in conjunction with stainless steel U-bolts for the clamps are in demand for guy wires, cable messengers, and overhead ground wires to resist corrosion. Tests on such material were conducted recently by F. W. Kennedy, sales manager of the Malleable Iron Fittings Co's pole hardware department.

The tests were carried out at Branford, Conn. in the presence of representatives of utilities and of Allegheny-Ludlum Steel Corp and Page Steel & Wire Co, who supplied the U-bolt rods and strands, respectively. The clamps used were the MIF design with galvanized trunnion blocks separating the load and tail strands of the test loop and with the U-bolts canted to simulate a "come-along" grip.

The tests generally showed a breaking load 4 to 13% in excess of the rated ultimate tensile strengths of the 3-wire ($\frac{5}{16}$-in.) and 7-wire ($\frac{5}{16}$- and $\frac{3}{8}$-in.) strands. In all tests the breaks occurred at the leading edge of the clamp on the load side of the loop where the free length joined the relatively short length gripped in the clamp where elongation is restrained.

•

Builds Explosion Proof Motor in 736 Frame Size

Wagner Electric Corp, St. Louis, Mo., has announced that it is now building totally enclosed fan-cooled motors in the 736 frame size, in ratings of 200 hp at speeds of 3500, 1750, 1160 or 870 rpm, 550 v or less, and 150 hp at the same speeds for operation on 2300 v. These motors are approved by the Underwriter's Laboratories for Class I, Group D, and Class II, Group E, F, and G hazardous locations.

•

Employee Report Cited

The grand trophy award for 1947's best annual report to employees was presented recently to the Westinghouse Electric Corp by the Associated Industries of Massachusetts.

Plans 25-30% Increase in Refrigerator Output

Westinghouse Electric Corp plans to increase 1949 refrigerator unit production 25 to 30% compared with 1948, George H. Meilinger, household refrigeration division manager, has revealed. Procurement of necessary steel may not be possible, however, because of developments in the first quarter of 1949.

Mr Meilinger emphasized that steel suppliers have not yet indicated the company's fourth-quarter quota will be cut. But he pointed out that steel-mill commitments under ERP and the country's industrial-mobilization program are expected to become heavier after Jan 1.

Westinghouse closed out production of its 1948 refrigeration line and began production of its 1949 line on Nov 1, Mr Meilinger said. He stated that the new line, representing the first radical postwar change made by the organization, will not be available to the public until the opening of the Chicago home-furnishings market on Jan 3.

Because of greater production of larger and more comprehensive units, retail prices of the line will be generally higher, according to Mr Meilinger. He pointed out, however, that consumers "really will not pay higher prices since the products they receive will have greater capacity per cubic foot and improved special features."

Westinghouse does not expect to drop refrigerator allocations until the fall of 1949, Mr Meilinger stated.

•

Sets Sales Goal for 1949

Hotpoint, Inc, has established a 40% increase in dealer sales of major electric appliances for kitchens and home laundries as its sales goal for 1949. The new marketing program for attaining this sales objective will be based on strengthening and refining rather than on further expanding the company's present dealer organization.

•

Leases Aluminum Plant

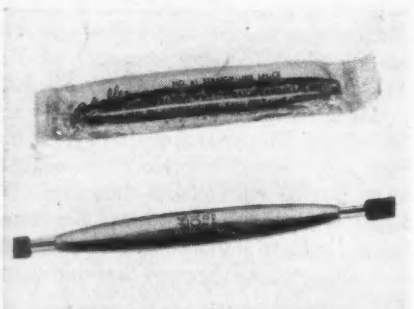
Permanente Metals Corp has been awarded a lease of a big aluminum mill at Newark, Ohio, by the War Assets

Administration. The plant, including 36 buildings on 300 acres of ground, cost the government a reported $22,712,371. It was operated during the war by the Aluminum Co of America. WAA said the aluminum plant lease is for 10 years with the privilege of renewing for an additional 15 years.

•

Wire Splices Are Greased by Reliable Electric Co

Reliable Electric Co, 3145 Carroll Ave, Chicago 12, Ill., has announced that its straightline splices are now protected against corrosion and are individually packaged. A neutral grease is used to prevent corrosive action in the splice itself, and further acts as a lubricant, decreasing friction between the backs of the jaws and the tube of the splice.



RELIABLE'S straightline splices are now filled with a neutral grease and wrapped in cellophane to prevent corrosive action

The grease is reported not to be affected by weather change or time. Each splice is packaged in a double cellophane pouch in order to exclude all foreign particles.

•

Manufacturers Make New Sales Assignments

Electrical manufacturing companies have recently made the following appointments to their sales staffs:

Automatic Control Co, St. Paul, Minn., has appointed Howard C. LaMere representative in the Chicago area. His headquarters are located at 205 W. Wacker Drive, Chicago 6.

Electric Products Co, Cleveland, has appointed Hubert Kaub & Co, Denver, Colo., as agents. They are direct factory representatives covering the states of Colorado, Wyoming, Utah, New Mexico, and El Paso County of Texas.

Trumbull Electric Mfg Co has appointed H. S. Hill as manager of its office in Schenectady, N. Y. In this new assignment, Mr Hill will be responsible for all Trumbull relations with the General Electric Co.

NEW ELECTRICAL CONSTRUCTION

A weekly selection of U. S. electrical construction projects announced by private and government utility systems involving more than $70,000. Also listed are major industrial and construction jobs where electrical work is indicated or implied

UTILITIES

Proposed Construction

Colorado—Y-W Electric Assoc., Yuma, 242.5 mi. electric rural distr. line, Yuma Co., **$242,000.** William H. Burgwin, 442 N. 7 St., Fredonia, Kan., engr.

Idaho—Bureau Reclamation, Dpt. Interior, Bldg. 1A, Denver Federal Center Denver, Colo., furnishing f.o.b. cars shipping point or f.o.b. cars Acequia, three 3,333 kva. 76,300/132,000 wye to 33,000 delta volt, single phase, 60 cycle oil-immersed, self cooled outdoor, power transformers, one 138,000 volt, 800 ampere, 1,500,000 kva interrupting capacity, outdoor, power circuit breaker and one 34,500 volt, 600 ampere 500,000 kva interrupting capacity, outdoor type, power circuit breaker for installation in interconnecting substation Idaho Power Co., Minidoka Proj. Spec. 2474. Plans deposit $1.25. L. N. McClellan, ch. engr.

Illinois—Western Illinois Electrical Co-operative, L. C. Marvel, mgr., Public Sq., Carthage, added rural distr. lines, sys. imprvs., Hancock and Henderson Counties. **$253,000.**

Ill., Lamont—U. S. Atomic Energy Comn.; Lamont, power house at Argonne Atlic Energy laboratory, for University of Chicago, **$2,500,000.** Jackson & Moreland, 31 St. James Ave., Boston 16, Mass., engrs.

Ill., Chicago—City, Dpt. Purchases, Supplies, & Contracts, City Hall switchboards, electrical cabinets, conduits, wires, cables, etc., Dearborn St. Subway, Contr. E-3. Plans deposit $40.

Indiana—Hendricks County Rural Electric Membership Co-operative, Danville, 60 mi. rural distr. lines, sys. imprvs., Hendricks Co., **$320,000.**

Iowa—Lyons Rural Electric Corp., Rock Rapids, 8 mi. rural distr. lines, Lyons Co. **$400,000.** Brown Eng. Co., 322 K P Bldg., Des Moines, consult. engr.

Iowa—Southern Iowa Electric Co-operative, Bloomfield, rural distr. lines, Davis Co., **$1,493,000.** Stanley Eng. Co., Muscatine, consult. engr.

Kansas—Twin Valley Electric Co-operative, W. G. Hatfield, mgr., Altamont, 143 mi. rural distr. lines, D. Sect., Labette, Montgomery, Neosho and Cherokee Counties. Over **$100,000.** Frank Horton & Co., Lamar, Mo., engrs.

Maine—Denny's River Electric Co-operative, Calais, 33 mi. rural distr. lines, sys. imprvs., Washington Co. **$105,000.**

Missouri—White River Valley Electric Co-operative, Hollister, 462 mi. rural distr. lines, 24 mi. tie lines, Taney Co. **$920,000.** Frank Horton & Co., Lamar, consult. engr.

Nebraska — Eastern Nebraska Public Power Dist., Syracuse, rural distr. lines, Otoe Co. **$487,000.** Henningson Eng. Co., Standard Oil Bldg., Omaha, consult. engr.

North Dakota — Minnkota Power Co-operative, Grand Forks, generation and transmission facilities to supply 10 rural electric distr. co-operatives. **$6,197,000.** Ellerbe & Co., E. 505 1st Natl. Bank Bldg., St. Paul, Minn., consult. engrs.

Oklahoma—Oklahoma Gas & Electric Co., 321 N. Harvey St., Oklahoma City, electric power lines, gas lines, electric power and gas plants, Oklahoma City and Tulsa areas. **$7,500,000.**

Texas—Wise Electric Co-operative, Decatur, rural distr. lines, Wise Co. **$550,000.**

Low Bidders & Contracts Awarded

Arizona-California-Nevada — Bureau Reclamation, Dpt. Interior, Bldg. 1A, Denver Federal Center, Denver, Colo., Nov. 9, furnishing one or two 115,000 hp., 180-rpm., vertical-shaft, single-runner, Francis-type hydraulic turbines with pressure regulators for Unit A3 and/or Unit A4 in the Hoover Power Plant, Boulder Canyon Proj., Spec. 2463, from Allis-Chalmers Mfg. Co., Continental Oil Bldg., Denver. Schedule 1 **$1,025,900;** Schedule 2 **$1,025,900;** Schedule 3 **$1,990,000.**

Florida—Suwannee Valley Electric Co-operative, Live Oak, 219.8 mi. electric rural distr. line, Lafayette Co., to Birmingham Bldg. Co., 315 S. 20 St., Birmingham, Ala., **$286,065.** E. P. McLean, Eng. Co., Moultrie, Ga., engr.

Georgia—Jackson Electric Membership Corp., Jefferson, 209.15 mi. electric rural distr. line, Jackson Co., to Montgomery Elec. Co., 121 S. Lewis St., Montgomery, Ala., **$244,949.** Patterson & Dewar, Decatur, engrs.

Illinois—M. J. M. Electric Co-operative, Inc., Carlinville, 179.3 mi. rural distr. lines, Macoupin Co., to W. W. DeLong, Carlinville, labor **$80,619,** materials **$179,000,** total $259,619.

Ind., Lawrenceburg—American Gas & Electric Co., 30 N. Church St., New York, N. Y., first bldg. in group bldgs., steel, rein.-con. power plant, Contr. 1, from Maxon Constr. Co., 131 Ludlow, Dayton, O., **$1,500,000.** H. A. Kammer, 30 N. Church St., New York, N. Y., archt.

Kansas — Sumner-Cowley Electric Co-operative Assoc. Inc., Wellington, 218.76 mi. rural distr. lines, Sumner and Cowley Counties, to R. E. Mattison & Co., P. O. Box 458, Britton, Okla., labor **$91,039,** materials **$218,000,** total $309,039.

Kentucky—West Kentucky Electric Co-operative Corp., Mayfield, 248 mi. rural distr. lines, Graves Co., to Townsend Electric Co., Inc., 112 John St., Jackson, Tenn., labor **$108,972,** materials **$248,000,** total $356,972.

South Carolina—Broad River Electric Co-operative, Gaffney, imprv. 99.54 mi. rural distr. lines, Cherokee Co., to W. S. Anderson Electric Co., 246 Meeting St., Charleston, labor **$46,260,** materials **$99,000,** total $145,260. Bids 8/31.

INDUSTRIAL, COMMERCIAL & PUBLIC BUILDINGS

Proposed Construction

Calif., San Francisco—Dpt. P. Wks., City Hall, approved $48,890,000 bonds, schools and school addns. Dodge A. Riedy city archt.

Miss., Meridian—State, plans by Chris Risher, Meridian hospital to be known as East Mississippi State Hospital. **$3,000,000.**

O., Parma and Parma Heights—Parma Heights Development Co., Donald A. Liftus, Marshall Bldg., Cleveland, 2,500 unit garden type apartment, incl. 75 store shopping center, motion picture theatre, bowling alleys, etc. **$30,000,000.**

Okla., Norman—Veterans Admin., Vermont Ave. between H and I Sts. N. W., Wash. 25, D. C., 6 story 750 bed neuropsychiatric hospital, incl. 3 story administration bldg., 5 story administration bldg., 3 story treatment bldg., 1 story infirmary, etc., brick, stone exterior, rein.-con. frame and fdn. **$11,500,000.** H. Voelcker & Assoc., 2801 San Jacinto St., Houston, Tex., archts. Robert J. Cummins, Bankers Mortgage Bldg., Houston, Tex. and R. F. Taylor, Bankers Mortgage Bldg., Houston, Tex., engrs.

W. Va., Weirton—City, Thomas E. Millsop, mayor, 125 to 150-bed hospital. **$3,000,000.**

Low Bidders & Contracts Awarded

O., South Point—Solvany Process Div., Allied Chemical & Dye Co., 61 Broadway, New York, N. Y., urea plant, separate contracts. **$2,000,000-$3,000,000.**

Tenn., Chattanooga — State Health Comn., Nashville, tuberculosis hospital, to Foster & Creighton Co., American Natl. Bank Bldg., Nashville, **$1,826,000.** Bids 11/9.

NEWS ABOUT PEOPLE

Smith Elected President, Canadian Niagara Power

Bethune L. Smith, a partner in the law firm of Smith, Rae, Greer and Cartwright, has been named president

B. L. SMITH

of the Canadian Niagara Power Co Ltd, Fort Erie, Ont. Already a director of the utility, he succeeds as president the late John E. Lawson of Niagara Falls, Ont., who died last summer.

At the same meeting of the board A. T. O'Neill, president of Buffalo Niagara Electric Corp and a director of CNP, was named a vice-president and Charles A. Clancy of Niagara Falls was chosen vice-president and general manager. Walter S. Schmidt of Buffalo was named secretary.

Mr Smith was called to the bar of Ontario in 1930 and entered the law firm founded in 1845 by his grandfather. A specialist in corporation law, he also is a director of numerous industrial companies.

Mr O'Neill, who has been identified with the public utility business for 39 years, is president of both Buffalo Niagara Electric and its subsidiary, Niagara Falls Power Co. He also is a vice-president and a director of the Niagara Hudson Power Corp, parent company of these utilities.

Formerly assistant general superintendent of Niagara Falls Power Co, Mr Clancy was named general manager of Canadian Niagara shortly after Mr Lawson's death. The directors have now voted him the additional status of vice-president. Mr Schmidt is secretary of Buffalo Niagara Electric Corp, with offices in the Electric Building, Buffalo.

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Todd Elected President of Mechanical Engineers

(See Front Cover)

James M. Todd, consulting engineer of New Orleans, has been elected president of the American Society of Mechanical Engineers. Mr Todd will be installed in office during the annual meeting of the ASME in New York next week.

Mr Todd established private practice as consulting mechanical and electrical engineer, specializing in air conditioning, power plants, and the equipment of large buildings and factories. He has been responsible for many important installations in the New Orleans and Houston (Tex.) areas.

During World War II, he handled mechanical and electrical problems in connection with airfields, shipyards, and other important defense work for the Army, the Navy, and the Maritime Commission.

Mr Todd has been active in national and local affairs of both the ASME and the AIEE. He organized the New Orleans section of the AIEE and was its first chairman. In addition to his committee work with ASME, Mr Todd has held office as manager, vice-president, and on the association's Council.

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▶ Cecil S. Lynch, executive vice-president of the Arkansas Power & Light Co for the past eight years, has been honorably retired by the board of directors at his own request. He has been retained as a director of the company and elected to the title of vice-president, retired. He joined Arkansas Power in 1919 as purchasing agent and became its first load dispatcher in 1923. He directed construction of the company's two hydroelectric dams on the Ouachita River, the Sterlington (La.) steam electric plant, and the Harvey Couch and Cecil Lynch steam electric stations. Directors of the company in 1945 named the new Little Rock plant the Cecil Lynch plant in recognition of his outstanding service of nearly 30 years.

D. B. McGregor Assumes New Duties in Arizona

Douglas B. McGregor has been appointed vice-president and general manager of the Arizona Edison Co, Inc,

D. B. McGREGOR

Phoenix. Francis W. Smith has been named treasurer to fill the vacancy created by Mr McGregor's step up.

Widely known in utility circles, Mr McGregor has been with Arizona Edison for 18 years. He became chief clerk of the company's general office in Phoenix in 1931 and advanced to the position of assistant secretary. He soon was made treasurer of the company and in 1942 was appointed a vice-president.

Mr Smith was assistant treasurer of the company before his recent promotion. He went to Arizona from Southern Union Gas Co, Dallas, Tex., where he served as director, vice-president, and treasurer. Until going to Arizona this spring, Mr Smith was engaged in handling financial and accounting matters for the Texas utility.

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▶ Edwin D. Tillson, who recently retired as supervisor of the testing department of the Commonwealth Edison Co, Chicago, has joined the staff of Lighting Products, Inc, Highland Park, Ill., as consulting engineer. Mr Tillson will work on new lighting equipment designs as well as lighting application problems. Under his direction since 1921, the lighting laboratory of the Commonwealth Edison Co expanded its activities to include testing and research in all phases of residential, commercial, and

industrial illumination, infrared, induction and dielectric heating, and the testing of germicidal and therapeutic equipment.

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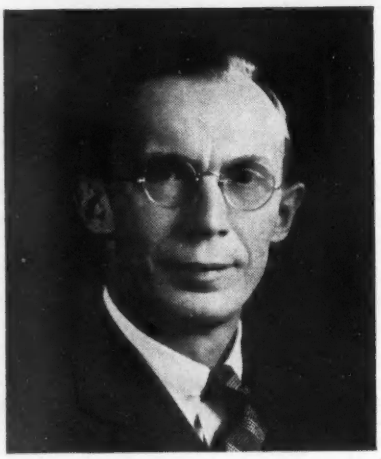
Harroff Made General Manager, GE Lamp Dept

Fred F. Harroff has been appointed general manager of General Electric Co's lamp department, effective Dec. 1. M. L. Sloan, GE vice-president, who has been general manager of the department since 1942, will continue in his capacity as vice-president with offices at the department's headquarters at Nela Park, Cleveland. In his new position Mr Harroff will be responsible for the development, manufacture, sale, and application of sources of light and radiant energy.

A veteran of 28 years' experience in the department, Mr Harroff joined GE at Nela Park in 1920. He served in the sales operation division for 10 years and



F. F. HARROFF

in 1931 was transferred to the administration division. In 1943 he was advanced to the position of assistant general manager of the lamp department. Up to the close of the war he was responsible for coordinating the manufacturing activities of the department.

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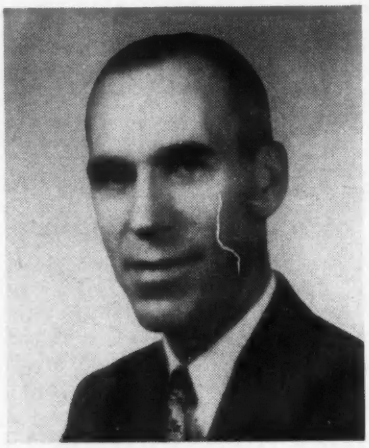
▶ PAUL H. GOODELL has been appointed manager of industrial heating sales of the Trumbull Electric Manufacturing Co. Plainville, Conn. Mr Goodell has been responsible for many large industrial heating installations made during the past ten years, and is well known as a pioneer in electric infrared heating. He is chairman of the radiant heating committee of the American Institute of Electrical Engineers and is a member of the Illuminating Engineering Society and of several other engineering associations.

Landers, Frary & Clark Elects R. N. Campbell, V-P

R. N. Campbell has been appointed vice-president of Landers, Frary & Clark, New Britain, Conn., in charge



R. N. CAMPBELL

of manufacturing operations. He succeeds L. A. Brown, who recently resigned. At the same time the promotion of Charles Cook as manager of the main plant of the company and as assistant to Mr Campbell was announced.

Mr Campbell brings to Landers, Frary & Clark more than 22 years of manufacturing experience, most of them spent with the Carrier Corp of Syracuse, N. Y. When he left the Carrier organization early in 1946, he was in charge of all manufacturing operations at the main Carrier plants in Syracuse. He left Carrier almost three years ago to join the Timken Detroit Axle Co in Jackson, Mich.

Mr Cook began working for Landers, Frary & Clark 38 years ago. In his new position, he will have charge of manufacturing activities at both the Center Street and Plainville plants of the company.

OBITUARY

▶ FRED H. SMITH, 84, former vice-president, Worcester (Mass.) Electric Light Co, died at Taunton, Mass. on Nov 11. Born in Bangor, Me., he started work in 1888 with the then Thomson-Houston Electric Co at Lynn, Mass. In 1896 he became electrical engineer of the Worcester utility, assistant general manager in 1909, and vice-president in 1929. Retiring in 1938, he was retained as a consultant.

▶ WILLIAM F. TILTON, 67, manager of the Kittery (Me.) Electric Light Co, died at Portsmouth, N. H., on Nov 12. He was a native of Deerfield, N. H., and was graduated from the Thayer School of Engineering, Dartmouth College, in 1900. He entered utility service with the Amesbury (Mass.) Electric Light Co, later being with the Rockingham County Light & Power Co and New Hampshire Gas & Electric Co, both of Portsmouth.

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Arthur C. Watt

Arthur C. Watt, an executive assistant with the Commonwealth & Southern Corp, New York, since its formation in 1929, died on Nov 21 after a long illness at his home in Scarsdale, N. Y. He was 62 years old.

A native of Chicago, Mr Watt started his career there with the Rock Island Railroad, coming to New York to join the brokerage firm of Jones & Baker. In 1918 and 1919 he was connected with the staff of the *Magazine of Wall Street* and the following year became security analyst for Hodenpyl & Hardy, an investment banking house which developed public utility properties in Ohio, Michigan, and Pennsylvania. Mr Watt played an active part in carrying out the program that resulted in the combination of these properties into the Commonwealth Power Corp, which became the nucleus of the Commonwealth & Southern Corp.

Mr Watt had served on the advertising and public relations committee of the National Electric Light Association and was associated with its successor the Edison Electric Institute in advisory capacities. For many years he had been a member of the publicity and advertising committee of the American Gas Association.

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▶ EDWIN M. STURTEVANT, well known Baltimore lawyer and general counsel of the Consolidated Gas Electric Light & Power Co of Baltimore, died on Nov 12 after a short illness. He was 61 years old. Mr Sturtevant was regarded as an authority on public utility law and was the author of numerous papers on legal and allied subjects. He entered the legal department of the Baltimore utility in 1912 and was made general counsel in 1927.

▶ DANIEL G. THOMPSON, manager of manufacturing for the heating device and fan divisions in the Bridgeport and Allentown, Pa., works of the General Electric Co, died suddenly on Nov 9. He was 44 years old. A native of Chester, Pa., Mr Thompson joined GE in Bridgeport in 1933.

NEW EQUIPMENT

Luminaire With Control

A NEW luminaire equipped with a built-in photelectric control has been announced by General Electric's Lighting and Rectifier Divisions. The control responds to changes in the prevailing light level and turns the lamp "on" and "off" as conditions of visibility demand.

The new Form 110 luminaire, which has a standard optical system and mountings, is especially designed for residential, suburban, and traffic circle lighting.

The photoelectric control is mounted under a standard glass meter housing in the top half of a slip-fitter-type, die-cast aluminum hood. Developed to control individual luminaires on multiple street lighting circuits, it has a nominal rating of 120 v at 50/60 cycles.

The control unit is adjustable to operate between 1 and 6 ft-c at the control window. The units are interchangeable. Orientation is necessary only upon installation. Bulletin GEA-5141 provides additional information.

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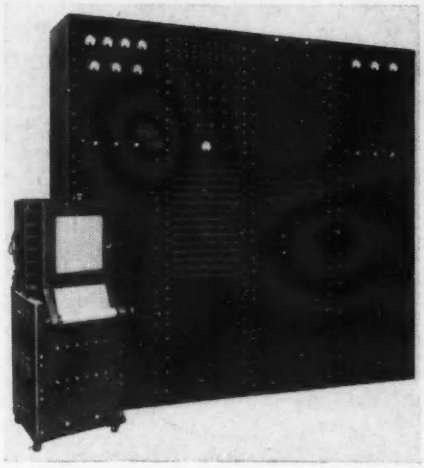
Electronic Computer

AN OFFICE SIZE electronic differential analyzer, the REAC (Reeves Electronic Analogy Computer), is now available from the Reeves Instrument Corp, 215 E. 91st St, New York 28, N. Y. It was developed for the Special Devices Center, Office of Naval Research.

It may be used for the solution and analysis of simultaneous differential equations. One computer will accurately solve any initial-valued differential equation up to the seventh order. Two or more computers may be coupled to handle higher order equations. A servo-mechanism unit may be added to provide for vector addition and resolution.

The REAC consists of 20 electronic amplifiers for summing and integrating. Initial conditions and variables are set



in on vernier dials. The problem is "set up" with telephone-type patch cords that connect amplifier inputs and outputs. The final solution is indicated on a 6-channel recorder.

The manufacturer states that an engineer or mathematician can readily learn how to operate the analyzer.

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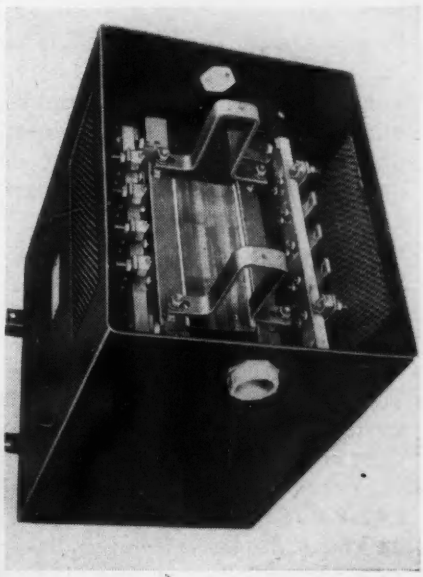
Dry-type Transformers

TWO TYPES each of dry-type single-phase and 3-phase distribution transformers for auxiliary lighting and power circuits are now made by Wagner Electric Corp, 6400 Plymouth Ave, St. Louis 14, Mo. All units have class A insulation; are rated 55 C rise continuous duty.

Two-winding transformers, single-phase type AE in sizes 250 va to 200 kva, and 3-phase type AP in sizes 3 to 300 kva, are available for voltages up to 600 v. Autotransformers, single-phase type AA for 500 va to 25 kva capacities, and 3-phase type AM for 5



to 50-kva capacities, are built for 240–240/120 v.

Suitable for indoor or outdoor installation, two-winding units through 10 kva and autotransformers through 25 kva, both single-phase, are equipped with endplates through-bolted over core and coils, a junction box on the bottom endplate, and knockouts for conduit wiring. Units have lugs for hanging.

Single-phase two-winding units larger than 10-kva, and all 3-phase units, are enclosed in ventilated steel cases, as shown, for indoor floor mounting only.

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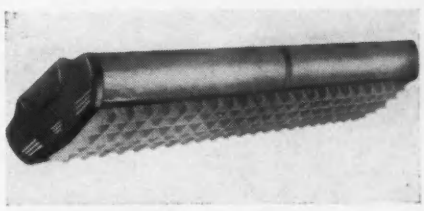


Lighting Fixture

A FLUORESCENT LIGHTING installation wherein two or four light units can be used is now produced by Gibson Manufacturing Co of Atlanta, Ga., to meet varying light requirements without loss of uniform appearance. The fixture has metal louvers and plastic side panels.

The No. 6,200-6,400 louvered light fixture combines a No. 900 louver assembly into one unit with either the No. 2,400 two-light fixture or the No. 4,400 four-light fixture.

ELECTRICAL BUSINESS OUTLOOK

ELECTION JITTERS are beginning to wear off. Most businessmen still find their order books full through early '49. The election hasn't slackened the urgent demand for steel or copper, automobiles and television sets, highways and schools. Government spending on defense and foreign aid is scheduled to increase for the next six months, irrespective of what new programs are voted for 1949. All this adds up to continued high level business activity.

This means no near-term interruption of the growing demand for electric power. Some analysts think business confidence in the long term outlook has been shaken. This might cause postponement of long range expansion programs. But such decisions won't be known for some time and won't slow down business construction until late '49 at the earliest. Utilities won't even catch up with existing power shortages by then. So utility planners will have ample time to recheck their blueprints.

Residential demand seems sure to maintain its rate of growth. The new Congress is practically committed to a public aid program which will maintain home building as fast as the materials situation permits. And more steel next year should mean a better flow of refrigerators, television sets and other fast selling appliances.

The farm power market also should keep growing. Farmers' net income this year will be down about 10% from last, because of declining grain prices and higher expenses. Next year may see another 10% drop. But farm income is still high enough to allow heavy equipment purchases. And farm savings are still huge.

Election results may mean that high support prices for farm products will be extended beyond 1949. In any case, some permanent support program is a sure thing. This should remove farmers' fears of a drastic decline in income, make them more willing to go ahead with electrification programs.

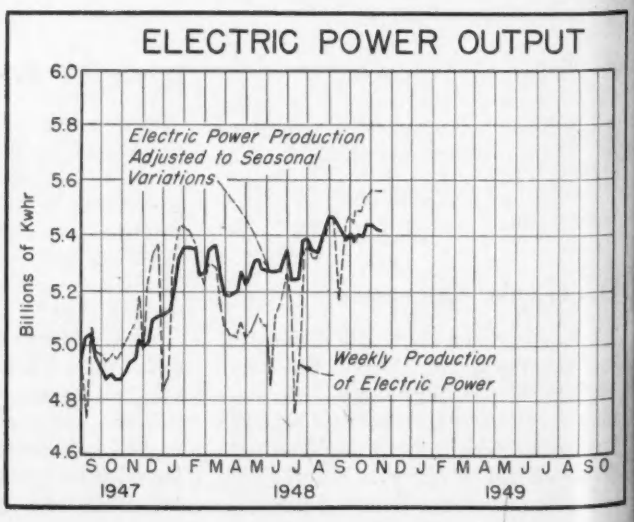
FOURTH ROUND WAGE INCREASES are now definitely in the cards. Unions feel they won an election victory, can count on Administration support. As in the third round, the break will probably come in the automobile industry. General Motors will have to come up with a boost of about 6% under the terms of its present cost-of-living contract. Ford's president has already announced that his company is resigned to another pay increase.

Auto makers are still in a sellers' market. They can cover higher wages by higher prices—unless controls interfere. This makes it hard on other industries, particularly utilities, whose prices cannot be raised so readily. Utilities have begun to catch up on past cost increases by applying for higher rates.

Further wage concessions, however, would put a renewed squeeze on profit margins. But when the national wage pattern rises, utilities have always had to follow suit.

Unions will not settle for small concessions after a political victory. Living costs have leveled out. So wage demands may again be based on the high level of corporate profits. Here utilities certainly have a case for resistance. Their prices and profits have lagged behind the rest of industry.

POWER PRODUCTION continues its seasonal climb to an all-time record. The amount of electric powered equipment in factories, stores and homes has, of course, grown enough to account for this. And the combination of winter weather and Christmas trade is sure to keep the load growing.

Retail stores, now in their busy season, are having their best year ever. Overall, retail sales are up about 10% over last year. And physical volume is up slightly too, to set a new high. However, stores are putting out more effort to sell. And that includes use of electricity in floor displays and specially lighted windows.

The retail pick-up accounts for much of the seasonal rise in power demand. The seasonally adjusted curve—which discounts this upswing—is high also. But it hasn't topped the peak reached late in August. That's because industrial production, the main determinant of power sales, has been running at capacity and shown no recent rise.